highly complex organism. Genetics can describe in considerable detail the structure of the nucleus of the egg before its development sets in. In one species—the very intensively studied fruit-fly—it can describe the more solid parts of the nucleus as consisting of a number of coherent threads (the chromosomes), each containing a row of hypothetical particles (the genes), and can identify many-of these particles as correlated with certain features of the adult organism, in the sense that it can be said to be proven, beyond reasonable doubt, that the presence in the egg of a certain gene A, occupying a certain position in one of the chains of chromosomes, is one of the conditions necessary to the development of the adult feature *a*; that is to say, if A is not present in the germ, *a* does not appear in the adult. In that sense the chromosomes of this species have been * mapped ', as it is said, to a very remarkable degree; and in some other species similar but less considerable advance has been made in our knowledge of the correlation between the structure of the adult and that of the egg. This new knowledge leads some of the enthusiastic geneticists so far as to say that the problem of heredity has been solved or nearly so; the implication being that, as soon as the chromosome-map of any species shall have been completed in the sense indicated above, we shall have complete understanding of the fact that the offspring closely resembles the parent.[1]

[1] The theory of the gene has been taught with increasing confidence, as a main prop of the mechanical biology, for more

than twenty years. But while this book is in the press there comes from a geneticist of the very highest authority, an article (R. Goldschmidt, "The Theory of the Gene," *Scientific Monthly,* March 1938) which not only throws grave doubt upon the existence of the gene, but rather virtually claims that all the evidence for its existence has now fallen to the ground. Goldschmidt regards the chromosome as the ultimate genetic unit.